UNITED STATES DEPARTMENT OF AGRICULTURE
Washington 25, D. C.

REPORT OF THE UNITED STATES DELEGATION TO THE THIRD CONFERENCE ON PROBLEMS OF NUTRITION IN LATIN AMERICA, OF THE FOOD AND AGRICULTURE ORGANIZATION AND THE WORLD HEALTH ORGANIZATION OF THE UNITED NATIONS

CARACAS, VENEZUELA
October 19 - 28, 1953

RESTRICTED

Third Conference on Problems of Nutrition in Latin America

Report of the U. S. Delegation

1. BACKGROUND

Two previous conferences have been held on problems of nutrition in Latin America. The first was held in Montevideo, Uruguay, in July 1948; the second in Rio de Janeiro, Brazil, June 5-13, 1950. This, the third, convened in Caracas, Venezuela, October 19-28, 1953, at the invitation of the Venezuelan Government.

The two earlier conferences were held under the auspices of FAO with the cooperation of WHO. The present one was sponsored jointly by the two agencies. The conference was held in the newly erected, spacious building of the National Institute of Nutrition. The staff of the Institute served as hosts to the conference and as such were responsible for the efficient arrangements and services both before and during the conference and for gracious and thoughtful hospitality throughout.

No plans were made originally to hold a series of conferences. At the first in Montevideo, however, it was recommended that there should be followup conferences at suitable intervals and this viewpoint has been reconfirmed at each of the two succeeding ones.

Each conference has devoted its attention to specific aspects of nutrition problems, and has formulated recommendations regarding lines along which work should proceed and governmental action taken. Reports of the two preceding conferences have been published 1/, 2/ and one will likewise be prepared for the third.

Two other conferences held in Latin America which also had an effect on the present one were:

(1) Seminar on School Feeding in Central America and Panama, held in Costa Rica in August 1953.

(2) Conference on Home Economics and Education in Nutrition, held in Trinidad in October 1952.

Background and other preparatory materials distributed to delegates before or at the start of the conference are attached. They are as follows:

1/ Conference on Nutrition, Montevideo, July 1948. Report published by the Uruguayan National FAO Committee, Montevideo, 1950.

2/ Report of the Second Conference on Nutrition Problems in Latin America, Rio de Janeiro, Brazil, 5-13 June 1950. FAO, Washington, U. S. A., August 1950.

FAO/NUT/1 - WHO/NUT/33 - Provisional Agenda

FAO/NUT/2 - WHO/NUT/34 - Notes on the Provisional Agenda

Rules of Procedure

FAO/NUT/3 - WHO/NUT/35 - Prov. Agenda Item 2 - Description of Protein Malnutrition in Mothers, Infants and Children

FAO/NUT/4 - WHO/NUT/36 - Prov. Agenda Item 2 - Prevention of Malnutrition Associated with Protein Deficiency

(with Appendices A (att. to document), B, and C)
Appendix A - Tables 1 and 2
B - Increasing Supplies of Fish in Latin America
C - Increasing Milk Supplies in Latin America

FAO/NUT/5 - WHO/NUT/37 - Prov. Agenda Item 3 - Note on Endemic Goitre in Latin America, by N. S. Scrimshaw

OR

A Special Study of Endemic Goitre in Mexico, Central and Latin America, by O. P. Kimball

FAO/NUT/6 - WHO/NUT/38 - Prov. Agenda Item 4 - The Training of Auxiliary and Community Workers to carry out Practical Nutrition Programs

In addition, other documents will be available at the Conference:

Report of the Third Session of the Joint FAO/WHO Expert Committee on Nutrition, Fajara, Gambia, December 1952

Report of the WHO Study Group on Endemic Goitre

Report on the "Sindrome Policarencial Infantil" (kwashiorkor) in Central America, by M. Autret and M. Behar

Preliminary report on "kwashiorkor" in Brazil, by J. Waterlow and A. Vergara with the collaboration of Prof. J. de Castro

2. AGENDA

October 19 (Monday)

10 a.m.	-	Plenary Session, at which officers of the conference were elected.
12 m.	-	"Agasajo" by the Venezuela Committee, followed by lunch.
2:30-3:30 p.m.	-	U. S. Delegation visited the Embassy and had a conference with the Agricultural Attache and the Ambassador.
5 p.m.	-	Inaugural Session with the President of the Republic in attendance. Conference officially opened with speeches by the Director of the Institute, the representatives of FAO (Dr. Aykroyd) and WHO (Dr. Burgess), and the Minister of Health of Venezuela.
7 p.m.	-	Conference members received by the President of the Republic at Miraflores, the executive mansion.

October 20 (Tuesday)

9 a.m. & 3 p.m.	-	Plenary sessions in which reports were given by delegates from various countries of work done or in progress.

October 21 (Wednesday)

9 - 12 a.m.	-	Delegates attended military parade given in honor of President Somosa of Nicaragua.
12 m.	-	Lunch given to heads of delegations and sponsors by the Permanent Member of the U.N. in Venezuela.
4 p.m.	-	Meeting of Commissions
7 p.m.	-	Reception given by the President of Venezuela for the President of Nicaragua.

October 22 (Thursday)

9 a.m.	-	Meetings of Commissions
3 p.m.	-	Meetings of Commissions

October 23 (Friday)

9 a.m.	-	Meeting of Commissions
3 p.m.	-	Meeting of Commissions

October 24 (Saturday)

9 - 1 p.m.	-	Conducted tour through Caracas, with visits to three modern markets, a popular restaurant for working people, a school lunch and to a large government refrigeration plant.
1 - 4 p.m.	-	Lunch typical rural barbecue style, offered by the governor of the Federal district.

October 25 (Sunday) - All-day conducted tour to rural community in which the Institute has a center where it is carrying out a rural welfare and nutrition program.

October 26 (Monday)

9 a.m. & 3 p.m.	-	Meeting of Commissions to formulate final report and recommendations.
9 p.m.	-	Program of local dances and songs, presented in honor of the conference by the Minister of Labor and the Institute of Nutrition, at the Municipal Theater.

October 27 (Tuesday)

9 a.m. & 3 p.m.	-	Meeting of Commissions to formulate final recommendations.

October 28 (Wednesday)

9 a.m. & 3 p.m.	-	Plenary sessions to consider reports of three commissions.
5 p.m.	-	Closing session. Discourse by the Minister of Foreign Relations.
8 p.m.	-	Banquet offered by the Minister of Health and Social Assistance.

3. PARTICIPATION

A complete list of delegates and other participants in the conference is attached. It will be noted that there were delegates from 10 of the American Republics--Argentina, Brazil, Colombia, Dominican Republic, Ecuador, Haiti, Panama, Peru, United States, and Venezuela--and also, from Dutch and United Kingdom territories in the Caribbean area--Surinam, Trinidad and Jamaica. In addition there were present technical representatives of FAO, WHO, and INCAP, and observers from the United Nations, UNESCO, the Holy See and a number of other organizations.

For the most part, the delegates were technically trained people--nutritionists, biochemists, and physicians--employed by their governments in ministries of health or agriculture and in nutrition institutes, or as professors in universities or medical schools.

4. UNITED STATES DELEGATION

The delegates from the United States were as follows:

Lydia J. Roberts, Ph. D., Chief
Department of Home Economics
University of Puerto Rico

Miss Sadye F. Adelson
Nutrition Analyst
Human Nutrition Research Branch
Agriculture Research Service
Department of Agriculture

Conrado F. Asenjo, Ph. D.
Head, Department of Biochemistry
School of Medicine
University of Puerto Rico

David Mark Hegsted, Ph. D.
Associate Professor of Nutrition
School of Public Health
Harvard University

Philip White, Ph. D.
Chief, IIAA Nutrition Program in Peru
Foreign Operations Administration
Lima, Peru

The first two (Roberts and Adelson) served as members of Commission I, the other three (Asenjo, Hegsted and White) as members of Commission II. Dr. Asenjo was also chosen as one of the vice-presidents of the conference, and as such presided at one of the final plenary sessions.

5. ORGANIZATION OF THE CONFERENCE

At the first plenary session the following officers for the conference were elected:

President--Dr. J. H. Rodriguez Cabrera (Venezuela)
1st Vice President--Dr. Carlos Collazos (Peru)
2nd Vice President--Dr. Conrado F. Asenjo (United States)

The inaugural session was officially opened by the President of the conference, with the President of the Republic of Venezuela and the Minister of Health in attendance. After brief talks by representatives of the sponsoring agencies, Dr. Aykroyd of FAO and Dr. Burgess of WHO, the Minister of Health of Venezuela gave a discourse in which he reviewed the progress made by his country on nutrition and health problems. In following sessions reports were given by delegates of various countries on work being done and progress made since the preceding conference.

Subsequently, the members of the conference were divided into three commissions to which were assigned the following problems for consideration:

Commission I.

(1) Progress achieved in Latin America in the field of practical nutrition since the second conference (Rio de Janeiro, 1950)

(2) The training of community and auxiliary personnel to carry out practical nutrition programs.

Commission II.

Protein malnutrition in mothers, infants and children (Kwashiorkor): Its Investigation and Prevention.

Commission III.

Endemic goiter and its prevention

The chairman of the three commissions were as follows:

Commission I. Dr. Carlos Collazo (Peru)
Commission II. Dr. Pastor Oropeza (Venezuela)
Commission III. Dr. Jose Gongora (Colombia)

The commissions met simultaneously and spent several days in detailed discussion on their specific assignments. In the last 2 days they prepared a report and formulated recommendations. The reports of the commissions were considered in closing plenary sessions and thus became the report of the conference as a whole.

The language of the conference was Spanish. There was simultaneous translation into English during plenary sessions and whispering interpretation during commission meetings for the delegates who spoke English only.

6. WORK OF THE COMMISSIONS

Commission I

Commission I concerned with practical nutrition programs covered the following areas of work: (1) Dietary surveys, (2) composition and nutritive value of foods, (3) feeding of children of school age, (4) feeding of workers, (5) public education in nutrition, (6) extension of nutrition programs into rural areas, (7) cooperation of workers of other professions in nutrition programs, and (8) nutrition and food policy.

a. Dietary surveys.--Completed dietary surveys were reported by Costa Rica, El Salvador, Guatemala, Honduras, and Panama, in cooperation with the Institute of Nutrition for Central America and Panama (INCAP) and by Brazil, Colombia, Peru, and Venezuela. The nutritional health conditions of the people have been studied as well as their diets except in Colombia and Venezuela. A variety of rural and urban groups have been included--school children, pregnant women, military draftees, industrial workers, institutionalized persons, and families. For the most part each study has been small in number of people and area covered. Also the number of communities surveyed have been few especially in relation to the large and varied population of several of the countries and of the region as a whole. However, Brazil has in process a more comprehensive survey of 12,000 families in 60 typical communities.

Countries reported finding diets most frequently short in animal protein, calcium, vitamin A, and riboflavin.

Sampling the population to get a representative sample loomed largest among the problems on which help is wanted. In discussions this was especially stressed by the delegates most familiar with making surveys. Need for a manual to guide investigators in analyzing the collected information was also emphasized. This would be a supplement to FAO's technical bulletin on, "Dietary surveys: Their Technique and Interpretation."

The conference recommended that:

1. - In view of the importance of sampling methods in dietary survey work, a seminar on statistical techniques, with special reference to dietary surveys, should be organized in the region with the help of interested international organizations.

2. - In order to help workers in the field and to secure uniformity of methods, FAO should prepare a practical manual on dietary surveys, in the interpretation of their result, to supplement its technical publication "Dietary surveys: Their Technique and Interpretation."

3. - National statistical institutes should collaborate by making personnel available to participate in dietary survey programs and also equipment for this purpose.

4. - When national statistical institutes or other governmental organizations make cost of living studies, they should give consideration to the views of national nutrition committees and nutrition experts with regard to the preparation of sections of cost of living questionnaires which relate to food consumption.

5. - Institutes of nutrition and other nutrition organizations should study calorie and nutrient requirements, with special reference to the different population groups in the region. This subject should be included on the agenda of the next Latin American Nutrition Conference.

6. - Health authorities undertake the examination of healthy groups in the population such as athletes, school children and people applying for health certificates, in order to obtain information about their state of nutrition and use this to throw light on the nutritional situation in the areas from which they come.

7. - Medical military authorities should examine conscripts with the same object in view.

b. Food composition.--Progress made in research on the composition and nutritive value of local foods seems to be greater than in other areas of nutrition work. It is an ongoing project in Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, Puerto Rico, and Venezuela, and at INCAP. Although a few laboratories are in an early stage of development, several have published their findings and others are about to make their data available. Large differences between the findings of the various countries have not been found. Comparisons however are frequently difficult because of incomplete or missing scientific terminology.

Although in the beginning work was concentrated on determining the content of raw foods in calories, protein, and the better known minerals and vitamins, attention is turning now to such additional problems as the effect of food preparation, differences among genetic varieties of corn and other basic foods, biological values of combinations of foods, and amino acid content and relationships in important foods.

A plea was made for agricultural workers, food processors, nutritionists, and biochemists to combine their efforts to bring the nutritional quality of national food supplies closer to the nutritional needs of their people.

The conference recommended that:

1. - Food samples for analysis should be selected by methods conforming to accepted statistical sampling procedures to ensure that they are as representative as possible. Information on all factors affecting nutritive value should be given.

2. - Food composition tables should contain an exact definition of the edible portion of foods analyzed and indicate the proportion that the edible part represents. The number of samples analyzed and the average weight of units should be included.

3. - The scientific name for each food as well as local common names should always be included.

4. - There should be more effective cooperation between workers concerned with increasing the production and improving the quality of foods, and with food processing, and workers engaged in the biochemical investigation of food composition. This should relate especially to the following:

(a) - The selection of seed with reference to nutritive value and yield.

(b) - The investigation from the agricultural standpoint of foods found to be of high nutritive value.

5. - In future work on food composition, consideration should be given to all the factors influencing the nutritive value of food and their utilization by the organism, special attention being paid to the following:

a) - The biological value of food mixtures and of common diets.

b) - The amino acid content of foods.

c) - The losses of nutrients resulting from preparation, processing and storage, particularly in staple foods.

d) - The digestibility of foods.

e) - The composition of food preparations in common use.

c.--Feeding of children of school age.--A program for feeding school children was reported by almost every country. However, the programs reach only a small part of the children of school age due to the limited number who can or do attend school and to lack of funds, trained personnel, and adequate cooking and dining facilities. The program in Puerto Rico which covers nearly one-half of the school population is probably most inclusive. Only about 10 percent of the school children in Brazil and Trinidad and 15 percent of those in Colombia and Venezuela receive school food. Urban children more often than rural ones benefit from the program.

The quantity and quality of school lunches vary all the way from one or two foods as a snack to a complete meal which supplies one-third to one-half a child's daily dietary needs.

Good food sources of nutrients likely to be low in local diets are often served to children getting food at school. Sometimes these are in the form of additives. Set amounts of yeast are added daily to food mixtures served in school lunches in Puerto Rico and Trinidad. Similarly iron is added to basic foods in Brazil. Iodized salt is served the children in Guatemala and El Salvador.

In a number of countries supplementary foods provided by UNICEF, "matched" by foods supplied by the government, have been the starting point of school feeding programs. In the report by Panama, the dry skim milk and margarine provided by UNICEF were mentioned as correcting the outstanding dietary shortages, vitamin A and animal protein, in their country.

The need to produce locally more of the foods needed for child feeding and to develop cheap processed foods and food mixtures was stressed. Governments should take advantage of the help offered by UNICEF and FAO to establish plants for processing foods likely to be of special value in child feeding such as fish-flour and soya bean products. Such good quality protein foods have great importance for countries in which the development of a satisfactory dairy industry is a long-term undertaking.

The conference recommended that:

1. - Further efforts should be made to develop school feeding in the region in accordance with the principles laid down at this conference and the first and second conferences.

2. - Increased use should be made of school feeding in educating children and the community in better dietary habits. Education in nutrition should be combined with education in health and sanitation.

3. - Long-term school-feeding programs should be based as far as possible on local foods, and that energetic efforts should be made to increase the production of foods suitable for this purpose. Special attention should be given to cheap processed foods and food mixtures.

4. - School gardens should be established as part of national school-feeding programs.

d. Feeding of workers.--Feeding programs for workers seemed further along in Brazil and Venezuela than in any of the other countries represented at the conference. In both, noon and evening meals are served. In Brazil at a price per meal of 15 to 20 cents (U. S. currency) workers in public dining rooms get about one-half of an average worker's daily

calorie allowances. The Venezuelan restaurants located near the workers' homes are open to the public (adults and children) and serve 40 to 50 percent of a worker's calorie and protein needs in a meal for one Bolivar. (This is equivalent to about 33 cents and represents about 5 percent of a worker's daily wage.).

In both countries the public dining rooms are used to give workers and their families food and nutrition information. In Brazil, special diets are provided for workers when prescribed by the Government's outpatient food clinic.

The Government dining rooms which do not begin to cover all workers are supplemented by dining rooms run by private enterprise. Any agricultural or industrial establishment with 200 workers in Venezuela (or 300 in Brazil) is required by law to have a meal service for its employees.

Colombia, which has no public dining rooms, has a new program for selling food to workers at half price.

More attention needs to be given to the diets of migrant workers and those employed in oilfields, mining areas, and plantations who often are not covered by feeding programs and may be dependent upon high-priced imported foods.

The conference recommended that:

1. - Industrial feeding services should be further extended in those parts of the region in which experience has indicated their value as a means of improving the nutrition of workers.

2. - Problems of nutrition among workers in oilfields, mining areas and plantations should be investigated and appropriate measures undertaken to improve the diets of these groups.

3. - The services established for industrial feeding should be also used for the education in nutrition of the families living within the zones which they serve.

4. - Technical personnel (dietitians, etc.) should be employed in the management of the workers' dining rooms in order that the greatest benefit from these services may be obtained.

e. Public education in nutrition.--Reports on nutrition education programs indicate that in comparison to Puerto Rico all the Latin American countries that were represented at the conference are in a preliminary state of development in respect to number of nutrition-trained teachers, population coverage, and adequacy of teaching materials. Lack of personnel and lack of centers to train personnel are the deterrents. One of the more advanced programs seems to be the one in Venezuela.

Two of the United States delegates had opportunity to learn through conferences and a field trip to three rural villages about some of the nutrition and home economics education work going on in Venezuela. Here, the Concejo Informativo de Educacion Alimentacia (CIDEA) and Concejo de Bienestar Rural (CBR) carry on a great share of the work. These agencies are cooperative undertakings of the privately financed American International Association for Economic and Social Development (AIA), and the Federal Government. CIDEA utilizes the mass media of press, radio, motion pictures, publications, and correspondence. Mobile units which combine libraries, motion picture shows, and information centers move about the country. Children and youths are reached in schools, colleges, and rural communities through nutrition clubs. CBR which has a combined program of supervised credit and extension education reaches nonborrower families through community centers. Classes in diet, hygiene, home food production and preservation, sewing, and making of improvised furniture and furnishings are conducted at the centers. Some of the centers serve as breakfast stations for preschool age children. (A similar program is going on in two States in Brazil.)

The Conference recommended that:

1. - All education should be based on knowledge of local customs, economic condition, and food resources.

2. - Education in nutrition should be further developed throughout the region by making use of a variety of appropriate approaches and techniques.

3. - Attempts should be made in the various countries to evaluate the practical results obtained by different approaches and techniques.

4. - All programs concerned with "fundamental education" should pay special attention to nutrition education.

5. - Countries should interchange information about the methods followed by different official and private agencies. International organizations can facilitate this interchange and themselves provide supplementary information.

6. - Teaching materials on nutrition, such as booklets, leaflets, posters, and filmstrips should be adapted to the needs and resources of the locality concerned. Simple materials prepared for teaching in a specific area are far more effective than more elaborate materials which are not directly related to local problems.

7. - Institutes of nutrition or other institutions of a similar kind should coordinate educational activities in this field so as to insure that what is taught is based on sound nutritional principles and that contradictory teaching is avoided.

8. - In view of the increased popularity of sports in certain countries, the necessary instruction in nutrition should be given to those who train professional and amateur athletes.

f. Extension of nutrition programs into rural areas.--It was quite evident that the extension of food and nutrition programs into rural areas is moving slowly due to lack of personnel. Several countries have organized rural demonstration projects in which workers in two or more fields--agriculture, home economics, nutrition, health education and/or supervised agricultural credit--combine their efforts. Extension workers in agriculture and home economics often work through clubs for children and adults. Schools are used as well as prenatal and child health clinics. Better nutrition is sought through improving the food supply as well as teaching nutrition. Farmers are shown the benefits to be derived from better farm tools, vegetable seeds, fertilizers, insecticides, animal feed, and breeds of livestock and poultry. Desirable home food production programs are demonstrated through community participation in planting and tending school gardens.

Actually the nutrition education program is adequate neither for urban or rural people in the region.

The conference recommended that:

1. - Since the improvement of the diet of rural populations is dependent on developments in agriculture and on better health and economic and social conditions, a coordinated approach should be adopted in attacking problems of nutrition. The government services concerned should unify their efforts and establish joint programs in order to achieve effective results and avoid duplication and confusion.

2. - In view of the complexity and extent of the problems to be solved, development programs should concentrate in the first place on the most urgent and accessible problems, proceeding later to the attack on less fundamental ones.

3. - The cooperation of religious bodies and private enterprise in improving conditions in rural areas should be solicited, constructive action on the part of such groups being integrated with the work of the government services.

g. Cooperation of workers of other professions.--By gaining the cooperation of workers of other professions in nutrition programs more people are being reached with nutrition information than the present small number of nutrition teachers could cover. Included among these other professionals are public health and social welfare workers, school teachers, doctors, nurses, and agricultural extension agents. Some training in nutrition has been given to them by national institutes of utrition, universities, INCAP, the UNESCO Fundamental Education Center at Patzcuara in Mexico (CREFAL), and other organizations. At CREFAL, students usually work in teams of five--each one being of different nationality and specialization. Watching and assisting the team nutritionist is a good opportunity for the others to get practical experience. At the University of Puerto Rico each third-year medical student is given a family to work with for the entire year. Among other observations he is taught to note are their family food practices and, if necessary to correct them.

FAO has assisted by providing fellowships for trainees and salaries for experts to take part in the teaching. Dietary surveys and school feeding programs have been used as practical training activities. In certain countries arrangements have been made to include instruction in nutrition in seminars and refresher courses for school teachers.

This use of workers in other professions in practical nutrition programs should be encouraged provided these helpers are well selected, given proper training in what nutrition information to give and how to pass it on, and made aware of their limitations in the field of nutrition. Their development and use should be considered supplementary to and not in place of an adequate number of fully trained nutrition teachers. Neither should it be allowed to delay any teacher-training program in nutrition.

The Conference recommended that:

1. - Further steps should be taken to provide training in nutrition to workers in other professions since these can make a valuable contribution to practical nutrition programs.

2. - Every effort should be made to find teachers who are capable of adapting scientific knowledge of nutrition to local problems.

3. - Suitable educational materials, adapted to local needs and customs, should be prepared and used in the training of auxiliary workers.

There is no hope of expanding practical nutrition programs in Latin America at the rapid rate the nutritional health of the people warrants, unless more sources for the training of nutrition workers are created. At present the number of properly trained personnel is small and the only institution in the region offering a 4-year course giving teacher-training suited to Latin American ways and levels of living is the University of Puerto Rico. Other colleges and universities in the area need to be urged and helped to develop courses which will prepare nutrition teachers to pass on their technical nutrition knowledge in ways best adapted to (1) training other professional workers, (2) teaching adults at the various educational levels usual in the country, and (3) teaching children and youths.

h. Nutrition and food policy.--No government reported the establishment of a national food and nutrition policy which would combine the efforts of ministries of agriculture, public health, social welfare, and education. However, nutritionists in several countries usually through their nutrition institutes have taken positive steps to acquaint their governments with the need for such a plan and what it should include.

The Conference recommended that:

1. - In each country there should be established a basic food and nutrition plan which takes into account the nutrition problems of the country concerned and lays down long-term objectives.

2. - The plan should be concerned with:

a) The broad general measures needed to attain these objectives, and

b) The part to be played by the different departments of state.

c) Specific and immediate measures to improve the diet of sections of the population.

Commission II

Commission II was concerned with the problem of the infantile multiple deficiency syndrome (Kwashiorkor). The following were the principal topics considered by the commission and the conclusions and recommendations arrived at:

a. Name of the syndrome.--After considering the propriety of the forty-odd names by which this syndrome is known, it was decided that "Síndrome pluricarencial infantil" (Infantile multiple dificiency syndrome) and Kwashiorkor should be officially adopted. The first will be the official one in Latin American publications, although the name Kwashiorkor will follow in parenthesis for the benefit of those more familiar with the African name. It was recommended that FAO and WHO adopt both names for use in their publications and that a statement should be made regarding the fact that both refer to the same syndrome.

In the course of this report we shall use the word "syndrome" to mean infantile multiple deficiency syndrome (Kwashiorkor).

b. Frequency of the syndrome.--This is a topic about which the information obtained during the committee discussion was not very definite. It seems to be quite apparent that in those areas in which studies on this syndrome have been carried out, the incidence has increased appreciably. This could be due to a greater familiarity with the symptomatology, although there are indications of a real increase in the number of cases.

The manifestation of the disease occurs more frequently in the children of the lower income group, both rural and urban, although the latter seem to be more affected than the former.

c. Symptoms of protein malnutrition.--An attempt was made to compare the symptoms described in the FAO/WHO Gambia report of 1952 with those observed by the Latin American workers.

In general the two clinical pictures agree, although there are in Latin America certain characteristic features which should be enumerated apart:

(1) In Latin America the earlier signs of this syndrome are underweight and underdevelopment, especially the latter.

(2) In certain countries like Brazil the cutaneous lesions characterized by areas of hyperpigmentation on the hips, abdomen, and back are found in more than 50 percent of the cases. This dermatosis which imparts to the skin a mosaiclike pattern, starts in small erythematous areas and later spreads joining together and forming large areas. Rarely are these lesions as well defined as those described from Africa. The mixture of several races makes it difficult to judge these skin lesions in Latin America. This is especially true regarding hair texture and pigmentation which is another of the symptoms described in the Gambia report. These two signs (skin pigmentation and texture and color of hair) should be studied more critically in the Latin American countries.

Another symptom which has been observed quite frequently among children suffering from this syndrome in Latin America is xerophthalmia. In Africa, vitamin A deficiency is rarely found associated with the protein deficiency syndrome. In the different regions of the world, including Latin America, vitamin B complex deficiency is frequently observed associated with protein deficiency.

In relation to visceral lesions, the description made by Latin American workers does not differ materially from those made by other investigators in Africa and Asia. Hypertrophy of the liver is not very marked and hepatic cirrhosis is rare as are cases of primitive carcinoma of the liver in adults. The latter condition has been observed in Africa and is considered a late manifestation of infant protein deficiency.

It was recommended that further studies should be made of this late manifestation of infant protein malnutrition with the aim of establishing if there is a real cause and effect relationship.

d. Etiology.--The etiology of the multiple deficiency syndrome observed in the Latin American countries seems to be a low intake of foods rich in high quality proteins such as milk, meat, fish, eggs, etc. These foods are not produced in sufficient amounts to supply the demand and for that reason the price is prohibitive for the low-income groups. In some regions the total food consumed does not even reach the minimum caloric requirements. In addition to economic factors there are social and cultural factors which influence the alimentary habits.

The signs of protein malnutrition appear in Latin America, the same as in other parts of the world, principally after breast feeding is discontinued. In Latin America babies are often breast fed until after one year of age and in the rural areas it is not infrequent to see even 3-year-old infants still breast fed.

In cases in which breast feeding was discontinued prematurely the syndrome appeared more frequently. Premature discontinuation of breast feeding is usually due to an acute state of undernutrition on the part of the lactating mother, which prevents her from continuing to breast feed her infant.

These infants have then to be artificially fed. This requires, first of all, a reasonable income and also favorable sanitary environmental conditions, two factors which the low-income groups can hardly provide. As a result of these poor socioeconomic conditions, the diets of these infants are inadequate both in quantity and quality. The amount of animal protein fed to them is very little or none at all.

The age at which this syndrome appears more frequently is between 18 months and 4 years of age.

In many of the Latin American countries there are governmental programs to protect (by supplying adequate food, etc.) infants during the first year of life and also to supplement the diet of school children, over 6 years of age, with school lunches. However, there seems to be a lack of this type of program in regard to the preschool child group (1 to 5 years of age). It was recommended that more attention should be given to the proper nutrition of this age group, which is very susceptible to developing the syndrome.

It was the consensus that although parasitism is frequently observed in patients suffering from this syndrome, it plays a secondary role in the etiology of the disease. It was recommended, however, that further studies should be made in trying to correlate parasitic infestation with the syndrome.

The possible effect of toxic substances in precipitating the syndrome was considered; in particular the use of "Bush Tea" among the population of some West Indian islands.

e. Long-term effect of protein malnutrition on the health of the community.--The importance of taking the proper steps in providing better nutrition to the population under 6 years of age was brought to the attention of different governments as this will have in the long run a very marked effect on the health of the whole community.

Unquestionably the disturbances produced by undernutrition during these critical years of development can be of irreversible nature in many instances, thus diminishing the efficiency of the individual to accomplish work and resist infection, etc., in later life.

f. Treatment.--

(1) Use of acidified milk has become generalized in several countries. Some authorities believed that it is tolerated better than unacidified milk, especially by those suffering from hypochlorhydria. The consensus was that it is possible to give a child 3-4 grams of protein (as acidified milk) per kilo of body weight per day.

(2) Some authors believe that skimmed milk is better than whole milk when starting the dietary treatment although whole milk should be used after the acute period of the syndrome is over.

(3) Some pediatricians recommend the use of lipotropic factors, such as "lipocaic" which has been found by several of them to be quite efficient in acute cases in which fatty infiltration of the liver or pancreatic disturbances were observed.

There was total agreement among the experts present on the use of antibiotics such as penicillin, aureomycin, etc., in the prevention and treatment of the infections associated to this syndrome, especially those of the respiratory passages. Also accepted as very useful was the use of vitamins A and C when signs of deficiency are apparent. However, a strong point was made regarding cautious use of the B-vitamins. There exists a strong current of opinion not to recommend their use in acute cases even when there are unquestionable signs of B-complex deficiency. Only after the patient has been built up in regard to his more acute protein deficiency should B-vitamin medication be considered and then only under the careful control and observation of a physician.

The treatment of infants and children in hospital wards should be limited only to acute cases. The less acute cases as well as the convalescent ones can be more conveniently treated at home or in vacation and convalescent colonies.

It was the general consensus that a well-balanced diet is the best treatment after the acute phase of the disease has disappeared.

The conference recommended that:

1. - Field studies

a. Further surveys should be made on nutritional status in different communities so as to correlate the same with the incidence of the syndrome.

b. Dietary surveys should be made in the same communities to establish the relation between the diet and protein undernutrition.

c. The relationship between season of the year and incidence of the syndrome should be studied.

d. Special studies should be made on the preparation and use of suitable foods for the prevention of protein undernutrition.

e. The growth and development of infants and children in the different regions of Latin America should be investigated in order to establish what should be considered the normal type.

f. The effect of the elimination of parasitism on the nutritional status of a community should be studied.

2. - Clinical and laboratory investigations

a. Ways of making an early diagnosis should be investigated.

b. Symptoms should be studied in relation to their cause and frequency, their regional and seasonal variations, and the role of the diet.

c. Influence of parasitism on the clinical picture and its evolution should be studied.

d. Therapeutic treatments in acute and benign cases and in the different stages of the disease should be investigated.

e. The suitability of various foods and mixtures of foods for the prevention and treatment of this syndrome should be determined.

f. Biology and pathology of the modifications observed in the cells, tissues and fluids of the human subjects suffering from the syndrome should be investigated; for example, studies of liver, pancreas, endocrine glands, enzymatic systems, hormones, blood, skin, and metabolism.

3. - Investigations on the nutritive value of foods

a. Nutritive value of foods with special emphasis on protein content and composition should be studied by chemical, biological, and bacteriological procedures.

b. Nutritive value of mothers' milk at different stages of lactation with special emphasis on its quantity and quality should be investigated.

4. - Research units

Research units for the specific investigation of protein undernutrition should be created within the institutes and other organizations already functioning. In addition, it was suggested that FAO and WHO should organize a technical committee to coordinate the work of these different units and keep each one informed of the developments taking place in the rest of them.

Commission III

Commission III dealt with the problem of endemic goiter and its prevention. A preliminary document prepared by Dr. Scrimshaw of INCAP entitled "A Note on Endemic Goiter in Latin America" served as a basis for discussion in this commission.

This document reviewed studies that had been made of the incidence of goiter in the various countries, and programs which are being carried out to relieve it. The studies revealed a high incidence of goiter in

Argentina, Bolivia, Brazil, Colombia, Ecuador, Guatemala, Mexico, Peru, Venezuela, El Salvador, Panama--in some regions up to 80 to 90 percent of children examined. In other countries, as Costa Rica, a lower incidence was found, and in Chile and Uruguay, practically none.

It was pointed out in the report that both of the preceding conferences had recognized that the problem was a serious one, but that efforts in the direction of eradication of the disease have lagged far behind studies of its incidence. Yet one notable example of the simplicity and effectiveness of treatment was reported from Colombia. In one area where in 1945 goiter was found in 64 percent of school children, the introduction of iodized salt in the area had resulted in a reduction of the incidence to 33 percent.

The conference recommended that:

1.- Those countries in Latin America, where endemic goiter is a public health hazard should artificially iodize their salt. Legislation making this prophylactic measure compulsory should be enacted.

2.- Iodized salt should be sold under the name "common salt" while natural salt should be labeled "uniodized salt."

3.- The proportion of iodine to salt to be used in Latin America should be of 1 part of iodine to 10,000-20,000 parts of salt.

4.- In case that it is impossible to provide, at a reasonable price, to the public dried salt containing potassium iodide plus a stabilizer, potassium iodate, should be used as a substitute.

5.- Those Latin American countries where endemic goiter is prevalent should undertake systematic surveys among representative groups of the population to determine, in the course of time, the effect of the iodation program on the goitrogenic index. In this way, it will be possible to evaluate the effectiveness of the prophylactic measure undertaken.

6.- Special surveys should be carried out to provide information on: Incidence of cretinism, mental weakness and deaf-mutes, hyperthyroidism, fetal mortality, birthrate, growth rate, per capita salt consumption in different areas, dietetic habits of the population, nutritional deficiencies, etc. These data could provide information regarding the possible goitrogenic factors.

7.- Further investigations should be made for the purpose of improving the analytical methods now in use for determining iodides and iodates in natural substances.

8.- Studies should be undertaken on the effect of environmental factors such as temperature, humidity, acidity, impurities, storage method on the keeping quality of iodine in salts containing different compounds of iodines.